

they are placed by the side of *T. u. uralensis*. In the Pyrenean race the blackish barrings on the under surface are very distinct and connected, and the belly is never very heavily marked with white. The upper surface is inclined to be dark and rather cold in tone, having less of the warm brown tints in the ground-colour of the mottled feathers. The average wing-measurement of the five specimens examined is 278·9 mm., or 21·6 mm. less than that of the average typical bird. The details are as follows:—

	Wing.
♀ ad. Pic de Gaube, Htes. Pyr., 1,800 m., Oct. 10, 1912. (Ingram Coll.)	284 mm.
♀ ad. Environs of Caunteret, Htes. Pyr., 2,000 m., Nov. 8, 1906. (Tring Mus.)	281 mm.
♀ ad. Environs of Caunteret, 1,600 m., June 1906. (Tring Mus.)	277 mm.
♀ ad. Forêt de Gaube, Htes. Pyr., 1,600 m., Oct. 10, 1904. (Tring Mus.)	270 mm.
♀ ad. Bagnères-de-Bigorre, Htes. Pyr., Sept. 1, 1881. (Marmottan Coll.)	282 mm.

By way of comparison it might be interesting to state that the average wing-measurement of twenty-six males of *T. u. urogallus* from various parts of Europe is 386·3 mm. (maximum 403 mm., from Lithuania [Brit. Mus.] : minimum 374 mm., from Scotland [Brit. Mus.]). The average of a similiar number of females is 300·5 mm. (maximum 317 mm., from Novgorod, Russia [Tring Mus.] ; minimum 286 mm., from Norway [British Mus.]).

VII.—*Notes on the Bird-Life of Eastern Algeria.* By the Rev. F. C. R. JOURDAIN, M.A., M.B.O.U. *With Contributions* by H. M. WALLIS, M.B.O.U., and F. R. RATCLIFF, M.B.O.U.

THE following notes are based upon two visits paid by the writer to eastern Algeria in the spring of 1913 and of 1914. After landing at Philippeville I travelled by rail to Constantine, and thence to Biskra, breaking the journey at Ain Yagout, Bâtna, El Kantara, El Outaia, and Biskra. From

Batna the hills were worked east to Lambèse and Timgad, and from Biskra an excursion was made to Sidi Okba and Bordj Saada; while on the return journeys short visits were paid to Hammam Meskoutine, Bône and Lac Fetzara. Nearly 800 eggs were collected during the two expeditions. Messrs. F. R. Ratcliff and E. Mackenzie Murray also stayed for six weeks in north-east Algeria in the spring of 1913 and camped for some time at Ain Mokra, and Mr. Ratcliff has kindly contributed notes on the birds and eggs obtained there. Mr. H. M. Wallis has visited Algeria on four occasions: first, in February and March 1906, when he travelled from Algiers to Biskra, and from El Kantara for nine days in the southern Aurès range to Timgad, returning by Lambèse, H. Meskoutine, and Tunis. In March and April 1910 he visited Lac Fetzara twice, also H. Meskoutine and Biskra, and in 1911 again stayed at Bône and H. Meskoutine. In March and April 1912 (together with Mr. C. E. Pearson) he revisited Bône, H. Meskoutine, Constantine, Kroubs, El Kantara, and Biskra.

In the following notes, the portions for which the writer is responsible are marked (J): those contributed by Mr. Ratcliff (R), and those taken from Mr. Wallis's notes (W).

In order to facilitate comparison, the order and nomenclature of the list published by the Hon. W. Rothschild and Dr. Hartert in 'Novitates Zoologicæ,' xviii. pp. 471-550, have been as far as possible followed throughout. In those cases where there is any doubt as to the subspecies observed, binomials have been used.

1. *Corvus corax tingitanus* Irby. Moorish Raven.

Widely distributed over the whole of eastern Algeria, and in some parts common, but less numerous near the north coast. In the outskirts of Batna parties of five or six may be seen together, even in the breeding season. It nests by preference in cliffs, but occasionally also in high mud-banks, and in the wooded districts breeds in trees. We found a nest with five eggs at the top of an ilex, some 30 ft. from the ground, in the hills above Lambèse, on May 2. These

eggs had only been incubated for a few days, but the breeding season is evidently somewhat variable, as we also found young in a nest on Djebel Mellah, in the plain of El Outaia, on April 20, and took a clutch of two much incubated eggs on April 18. Most birds in this district, however, seem to lay about the third week in April (J). Abundant in Aurès range: flocks of nine and eleven seen on snow-covered fields in February. A nest seen in a pine above a cliff on Djebel Azrak (W). Not common near Lac Fetzara, only a pair or two seen (R).

2. *Coloemus monedula cirtensis* Hart. & Rothsch. Algerian Jackdaw.

A common resident in the gorge of the Rummel at Constantine (J : W).

3. *Pyrhacorax pyrrhacorax* (L.). Chough.

Met with in some numbers on the precipitous sides of Djebel Metlili, near El Kantara, but the breeding places were inaccessible (J). Flock of twenty close to El Kantara on Feb. 12; also noted at Tilatou: while in the clefts of the limestone rocks in the Taya gorge they were numerous in March 1906 (W).

4. *Garrulus glandarius cervicalis* Bp. Algerian Jay.

Several Jays were seen in the cork-oak forests at Gerst Tobeïga, west of Lac Fetzara. In the woods above Batna and Lambèse they were tolerably common. A clutch of three eggs was found in an ilex on April 28, while a second nest was still empty on May 2 (J). Only met with in Taya cork-oak forest, April 8, 1911 (W).

5. *Pica pica mauritanica* Malh. Moorish Magpie.

Tolerably common in the ilex scrub, which clothes the foothills of the Aurès range near Lambèse, but somewhat local, and nesting in colonies, several pairs breeding within a short distance of one another. The nests are almost invariably placed in ilex bushes generally at a height of about five feet from the ground, though on one occasion we found a nest at nine feet. They are extraordinarily

bulky, and the remains of nests of previous years may be seen in various stages of decay. The incubating bird sits very close, and is sometimes caught on the nest by the Arab herdboys, who destroy most of the eggs. Fresh and slightly incubated clutches of five or six eggs were taken between April 26 and May 2 (J). An old nest noticed in low ilex, high up on south slope of Aurès range (W). Nest with fledged young a day's march east of Khenchela on May 24 (R).

6. *Sturnus vulgaris vulgaris* L. Starling.

Seen in the market at Algiers, beginning of February : also seen in flocks at El Kantara and Hammam Meskoutine in February (W).

7. *Oriolus oriolus oriolus* (L.). Golden Oriole.

Males were noted on migration at Bordj Saada (April 25) and near Batna (May 3). M. Dufourg, jun., assured me that a pair once nested within the precincts of the Ferme Dufourg (J). First heard at Hammam Meskoutine about March 1 : a flock of four males in a garden near Biskra on April 12, 1912 (W). Two or three seen at Ain Mokra on May 3 (R).

8. *Coccothraustes coccothraustes buvryi* Cab. North-African Hawfinch.

Flocks noticed in the fruit-trees at Lambèse on May 3 (J). Met with abundantly near Hammam Meskoutine in March and April 1911 (W).

9. *Loxia curvirostra poliogyna* Whit. North-African Crossbill.

Small parties met with among the Aleppo pines between Batna and Lambèse on April 27 (J).

10. *Chloris chloris aurantiiventris* (Cab.). Spanish Greenfinch.

Common in the gardens at Batna and Lambèse (J). Common near Kroubs ; abundant and breeding at H. Meskoutine : eggs from April 19 (W). Breeds near Lac Fetzara : eggs taken in May (R).

11. *Carduelis carduelis africanus* Hart. North-African Goldfinch.

Generally distributed and very common, from the north coast to the oases south of the Aurès range such as Biskra and Sidi Okba. At Biskra we found eggs and young in the nests on the crowns and leaves of palm-trees, April 23-25, and at El Outaia large numbers were found breeding from April 16 onwards, on which date we found young (J). Abundant and general (W).

12. *Carduelis cannabina mediterranea* (Tsch.). Mediterranean Linnet.

Common on the high ground near Lambèse, where we found nearly fledged young on April 27 and met with many clutches of fresh eggs a few days later (J). Linnets (subsp. ?) noted in February at Biskra, the Aurès, Hammam Meskoutine, and on the wheat-growing plains (W).

13. *Serinus canarius serinus* (L.). Serin.

Widely distributed, as far south as Biskra, and tolerably common, but not so plentiful as the Goldfinch. A nest found in a palm at Biskra (J). Clutch of four fresh eggs ten feet up in orange-tree at Ain Mokra (R). Common and general: eggs taken at El Kantara, and an unfinished nest at Hammam Meskoutine on April 21 (W).

14. *Erythrospiza githaginea zedlitzi* Neum. Algerian Trumpeter Bullfinch.

Breeds in some numbers on the stony hills from El Kantara to Biskra, nesting under shelter of stones or among boulders, and sometimes in holes and crevices of high mud-cliffs. In a little gully at the foot of Djebel Mellah I met with four pairs nesting within a few yards of one another. They are confiding little birds, and will remain on the nest when the observer is within a yard or two. Clutches of four to six eggs may be found during the latter half of April (J).

15. *Fringilla cœlebs africana* Lev. Algerian Chaffinch.

Not uncommon near Philippeville and on the wooded hillsides of the Aurès, but apparently breeds rather late (J). Common near Ain Mokra: nest on May 5 with three eggs (R). General at El Kantara in February: nest and eggs in palm-tree at El Kantara, April 1910: also breeding in olives at Hammam Meskoutine on April 20, 1912, and in cork-oak at Philippeville on April 26 (W).

16. *Petronia petronia barbara* Erl. North-African Rock-Sparrow.

Breeds among the stonework of the Roman ruins at Lambèse; in holes of bridges at El Kantara, and in crevices and hollows in friable sandstone or high mud-cliffs near El Outaia. Generally found nesting in colonies. Fresh eggs taken on April 19 (J). Nest in a hole of a clay scarp with one egg, on April 14, 1912, at El Kantara (W).

17-18. *Passer domesticus tingitanus* Loche and *P. hispaniolensis hispaniolensis* (Temm.). House-Sparrow and Spanish Sparrow.

For fuller information as to the interbreeding of these two species in Algeria, we must refer our readers to the interesting observations of Messrs. Rothschild and Hartert, published in 'Novitates Zoologicae,' xviii. pp. 479-482. At El Outaia *P. hispaniolensis* was the prevalent form, and a male caught at Ain Dahlia was apparently a pure bred specimen of this species. These birds were breeding in the houses, as *P. domesticus* does with us. In the zizyphus bushes on the edge of the desert at Bordj Saada were hundreds of old Sparrows' nests, from which in many cases young had evidently been hatched off, but on April 27 there was not a single bird in the neighbourhood. In north Algeria the groves of eucalyptus near the stations are frequently occupied by colonies of Sparrows (J). The eucalyptus woods at Ain Mokra swarm with Sparrows, which appear to be *P. hispaniolensis*. One Stork's nest must have held twenty nests. Incubated eggs on May 5 (R).

19 *Emberiza calandra* L. Corn-Bunting.

Extremely common in the corn-growing districts south to Biskra. Clutches of five to six eggs taken from mid-April onward (J). Common near Ain Mokra: clutches taken from May 13 to 15 (R).

20. *Emberiza cia africana* Le Roi. African Rock-Bunting.

Noted near El Kantara, and on the hills above Lambèse on May 2 (J). Common on the barren and bushy hillsides of the Aurès range: also noted at H. Meskoutine in April (W).

21. *Emberiza cirrus* L. Cirl Bunting.

A nest with four incubated eggs found on May 14 at Ain Mokra (R).

22. *Emberiza striolata sahari* Lev. House-Bunting.

It is well known that this bird breeds in holes in the Arab houses at El Kantara, Biskra, and other places, but we were much surprised to find a nest with three eggs in the crown of a palm-tree at Biskra, quite 25 ft. from the ground! Moreover, it is by no means confined to the neighbourhood of houses, for we found several nests in small caves and recesses in the face of perpendicular cliffs at considerable altitudes among the mountains, and far from any buildings. In the villages almost any kind of hole may be utilized: we have seen the characteristic "pad" of hair, lining even old Swallows' and Pigeons' nests in the out-buildings of a French farm. The clutch consists of four eggs and fledged young were seen on April 21, and fresh eggs from April 18 to May 1 (J). Resident in Biskra, El Kantara, and the Arab villages in the Aurès range, where it was found haunting the houses in February (W).

23. *Rhamphocorys clot-bey* Bp. Falcon-billed Lark.

A family party of recently fledged young met with east of Biskra on April 24 (J). Empty nest and four half-grown young found dispersed at varying distances on April 10, 1912, near Biskra: both parents shot (W).

24. *Melanocorypha calandra calandra* (L.). Calandra Lark.

Generally distributed over all the corn-producing district from El Guerrah south to the plain of El Outaia and east to Lambèse. Nests with four eggs taken April 23 and May 2 in cornfields near Lambèse (J). Abundant and general on the central tableland (W). Not noted near Lac Fetzara (R).

25. *Calandrella brachydactyla rubiginosa* Fromh. South Algerian Short-toed Lark.

Fairly common on the plain of El Outaia, especially on the edge of cultivation. Nests with three or four eggs found from April 17 to 30 (J). Short-toed Larks (subsp. ?) are also found in Algeria in winter: noted in Algiers market and on snowy ground at El Guerrah (W). Seen near Lac Fetzara, May 11 (R).

26. *Calandrella minor minor* (Cab.). Lesser Short-toed Lark.

Only met with near Bordj Saada late in April (J).

27. *Ammomanes deserti algeriensis* Sharpe. Algerian Desert Lark.

Quite common on the rocky hillsides at El Kantara and on the mountain slopes bordering the plain of El Outaia, as well as near Biskra. All the nests found had a more or less prominent wall of loose stones on the lower side, and are generally sheltered by a flat stone or a small clump of some desert plant. The usual number of eggs is three or four: only one out of about thirty nests examined contained five eggs. There is much variation in the size and colour of the eggs; the largest measuring 25.4×18 mm., and the smallest 19.9×16.1 mm. Nests with young were found on April 20 and 21 at El Outaia, and fledged young seen at Biskra on the 24th, but many fresh eggs were taken from about April 20 to the end of the month (J). Hen feeding young in nest at Fontaines Chaudes near Biskra on April 11, 1912 (W).

28. *Galerida cristata arenicola* Tristr. Tristram's Crested Lark.

This form of Crested Lark is common in the plain of El Outaia and is also found near Biskra and Sidi Okba. Nests with four or five eggs were found from April 16 onwards. In many cases the eggs are more boldly marked than those of *G. theklæ*, but this is not invariably the case, and as the ranges of the two species overlap, careful identification is necessary (J).

29. *Galerida theklæ harterti* Erl. Hartert's Crested Lark.

Nest and four eggs of this dark race taken at H. Meskoutine, April 21, 1912 (W). Common on hillsides at Ain Mokra; nests with five and four eggs taken on May 9 and 12 (R).

30. *Galerida theklæ hilgerti* Roths. & Hart. Hilgert's Crested Lark.

Common on the stony hillsides near El Outaia and El Kantara, and also east to Lambèse. Most nests contained three eggs, and none more than four. They show great variation, but are never, in my experience, so boldly marked as some eggs of *G. cristata arenicola*. Eggs were found from April 20 onward (J).

31. *Galerida theklæ deichleri* Erl. Deichler's Crested Lark (?).

Met with on stony patches in desert south of Bordj Saada: one flushed from nest with three incubated eggs on April 27; and another nest with four eggs taken next day (J).

32. *Lullula arborea harterti* Hilg. North-African Woodlark.

Met with along the hillsides from Batna to Lambèse: a nest with four eggs found at the edge of the scrub on April 26 (J). Woodlarks met with in February at El Guerrah and H. Meskoutine: also in the market at Algiers (W).

33. *Alauda arvensis harterti* Whit. North - African Skylark.

Common in the cornfields near Batna and Lambèse, and south to MacMahon, where one was singing on April 20. Fresh clutches of three or four eggs taken from April 19 to 28 (J). Found breeding near Ain Mokra early in May (R). Skylarks (subsp. ?) noted at Biskra on Feb. 7, also at H. Meskoutine, and flocks near Bône on April 5 (W).

34. *Anthus trivialis trivialis* (L.). Tree Pipit.

One at Algiers, perched on a tree, early in February 1906 (W).

35. *Anthus pratensis* (L.). Meadow Pipit.

Noted at Biskra, February 6, 1906 (W).

36. *Anthus campestris* (L.). Tawny Pipit.

Not uncommon on the bare hillsides from Batna to Lambèse and also near Ain Yagout. A nest with five eggs taken on April 24 (J). Several pairs seen on the high plateau (R).

37. *Motacilla flava cinereocapilla* Savi. Ashy-headed Wagtail.

One of the problems we were particularly anxious to solve, was which race of Yellow Wagtail bred in north Algeria. The older writers, such as Tristram and Salvin, merely recorded "*Budytes flava*" as breeding at Zana and Ain Djendeli, and eggs from these localities are still catalogued under this head at the British Museum. Large numbers of some race of *M. flava* were migrating through Bordj Saada on April 26, but no specimens were obtained. They were evidently on their breeding ground in the water-meadows near El Guerrah on April 30 (J). Later they were found quite common and breeding near the shore of Lac Fetzara in May. A male shot at the nest had all the characteristics of the Ashy-headed form—white throat, dark crown, and indistinct eye-stripe, and a clutch of six eggs was taken on May 7 (R).

38. *Motacilla flava flava* L. Blue-headed Wagtail.

Seen on migration at Biskra in April 1912 (W).

39. *Motacilla alba alba* L. White Wagtail.

Almost universal in February : Biskra, February 7, etc. (W).

40. *Motacilla boarula boarula* L. Grey Wagtail.

Seen in the gorge at Constantine, February 23, 1906 ; also at Hammam Meskoutine about a week later (W).

41. *Certhia brachydactyla mauritanica* With. North-African Tree-Creeper.

Seen and heard in the cork-oak woods at Taya, April 8, 1911. Note quite loud and distinct (W).

42. *Parus major excelsus* Buvry. Algerian Great Tit.

Scarce : a pair seen near Lambèse (J). Noted in the Aurès range, February 15 ; also in cork woods at Taya (W). Uncommon at Ain Mokra : one nest with five eggs found in a eucalyptus stump, below the level of the ground, May 12, 1913 (R).

43. *Parus cœruleus ultramarinus* Bp. Ultramarine Tit.

General in wooded districts. Met with in the pine and ilex forest near Lambèse : a clutch of six eggs taken from a hole in ilex on April 29. Also common among the palms in oases of Biskra, Sidi Okba, etc. (J). Noted at El Kantara, H. Meskoutine, Algiers, Philippeville, and Bône, where it was breeding (W). Fairly common at Ain Mokra : nest with four incubated eggs behind a strip of eucalyptus bark, May 8, 1913 (R).

44. *Parus ater ledouci* Malh. Algerian Coal-Tit.

Clearly identified in pine forest above Lambèse, April 28 (J). Seen in cork-oak forest at Taya, April 8 (W).

45. *Panurus biarmicus* (L.). Bearded Tit.

This species has not been previously recorded from Algeria, but Mr. Wallis saw a pair, one of which had a grey

head, at close quarters flitting through the reeds in front of his boat on Lac Fetzara, and uttering the well-known ringing note, on April 11, 1911 (W).

46. *Lanius excubitor elegans* Swains. Desert Grey Shrike.

Met with in scattered pairs from El Kantara to the Col de Sfa, while in the zizyphus bushes near Bordj Saada it is quite common. The clutch varies from four to six in number. Nearly fledged young were found in the nest on April 27, but fresh eggs were also taken from April 18 to the end of the month (J).

47. *Lanius senator senator* L. Woodchat.

Generally distributed, and in some districts common from the north coast to Biskra, wherever there are any trees; a few pairs nesting even on the hillsides south of El Kantara (J). A nest with two eggs at H. Meskoutine on April 22, and another with one egg at Bône on the 25th: abundant near Lac Fetzara (W). Common at Ain Mokra, breeding in thorn-bushes, eucalyptus, olive, and oak trees: clutches of five or six eggs, May 5 to 15 (R).

48. *Pycnonotus barbatus barbatus* (Desf.). Dusky Bulbul.

Only noted at H. Meskoutine (J); Lac Fetzara and H. Meskoutine (W). Several at Ain Mokra (R). It is remarkable that the nest of this species has not been found by the many ornithologists who have seen the bird at Hammam Meskoutine.

49. *Muscicapa hypoleuca* (Pall.). Pied Flycatcher.

A pair seen at H. Meskoutine on April 19 and also on April 21, 1912 (W). These may have belonged to the Algerian breeding race, or possibly were only on passage.

50. *Muscicapa striata striata* (Pall.). Spotted Flycatcher.

On passage at Bordj Saada on April 26 (J). Common at Ain Mokra in May: clutch of three eggs taken on

May 13, 1913. This species had not been recorded previously as breeding in North Africa until Graf Zedlitz took a nest on May 22, 1913, at the same locality. See Journ. f. Orn. 1914, p. 139 (R).

51. *Phylloscopus collybita collybita* (Vieill.). Chiffchaff.

Reported as heard on February 17, and heard on the 26th at H. Meskoutine (W). (Several times *Phylloscopi* were noted on migration, but as no specimens were obtained it is inadvisable to record them.)

52. *Cettia cetti cetti* (Marm.). Cetti's Warbler.

Several seen and heard by the irrigation channels at Kroubs, April 17, 1912 (W).

53. *Acrocephalus arundinaceus arundinaceus* (L.). Great Reed-Warbler.

Very common in the reed-beds on Lac Fetzara. Most nests were still unfinished on May 1 (J). Nests ready for eggs on May 4 and full clutches of four eggs on May 13-15 (R). Heard and seen on April 11 (W).

54. *Acrocephalus streperus streperus* (Vieill.). Reed-Warbler.

While working the banks of the Oued Biskra, near Bordj Saada, I was much surprised to find many pairs of Reed-Warblers in full song among the mixed reeds and tamarisks. A careful search resulted in the discovery of an almost finished nest, about five feet from the ground, in a tamarisk bush. This is an extension of the breeding range of this species, which has hitherto not been recorded as breeding south of Ain Djendeli and Zana, and even there with some uncertainty, owing to confusion with *A. aquaticus* (J). Breeds in small numbers on Lac Fetzara: nest with three eggs on May 13, 1913 (R).

55. *Acrocephalus schœnobæus* (L.). Sedge-Warbler.

Song heard on Lac Fetzara, April 11, 1911 (W).

56. *Hypolais icterina* (Vieill.). Icterine Warbler.

Seen and heard at H. Meskoutine, April 1911 (W).

57. *Hypolais polyglotta* (Vieill.). Melodious Warbler.

Nest with five eggs found suspended among trailing briars at Ain Mokra, May 13, 1913 (R).

58. *Hypolais pallida reiseri* Hilg.

In song in the gardens at Biskra, April 24 (J).

59. *Sylvia hortensis hortensis* (Gm.) [*S. orphea* auct.].
Orphean Warbler.

Met with near Ain Mokra : clutches of four and five eggs taken on May 13 and 15, 1913 (R).

60. *Sylvia atricapilla atricapilla* (L.). Blackcap.

Noted at El Kantara in April: H. Meskoutine (nest with four pink eggs on April 19, 1912) and Bône (W). Common near Ain Mokra : nest with young and one egg, May 5 : four eggs May 12 (R).

61. *Sylvia communis communis* Lath. Whitethroat.

Singing in gardens at Lambèse, where it probably breeds: nest with young at Ain Dahlia, Lac Fetzara, May 1, 1913 (J). Common at Ain Mokra : young flying on May 11 (R). Seen at Bône, April 24 : also in song at H. Meskoutine (W).

62. *Sylvia melanocephala melanocephala* (Gm.). Sardinian Warbler.

Seen in the scrub above Lambèse, but not common (J). Common at Ain Mokra : clutch of three erythristic eggs taken on May 11, and one of four on May 13 (R). Common at Algiers and H. Meskoutine : eggs taken near Lac Fetzara on April 12, 1910 (W).

63. *Sylvia cantillans* Pall. Subalpine Warbler.

A pair identified at El Kantara on April 15, 1913 (J).

64. *Sylvia conspicillata conspicillata* Temm. Spectacled Warbler.

Seen at El Kantara and El Outaia in April. A nest with five young, which must have belonged to this species, brought in by an Arab at Bordj Saada on April 26 (J).

65. *Sylvia deserticola* Tristr. Tristram's Desert Warbler.

Not uncommon on the hillsides above Batna and Lambèse: a pair had an almost finished nest on April 28 (J). Noted at El Kantara, Feb. 11, 1906 (W). Common on the hillsides a day's march east of Khenchela, and evidently breeding on May 24 (R).

66. *Agrobates galactodes galactodes* (Temm.). Rufous Warbler.

In fair numbers at Biskra and El Outaia in April: frequently snared by Arab boys (J). Seen at Fontaines Chaudes, Biskra, April 11, 1911; also at Lac Fetzara, April 11, 1912 (W).

67. *Scotocerca inquieta saharæ* (Loche). Wren Warbler.

Met with locally in the plain of El Outaia, and more commonly between Biskra and Bordj Saada (J).

68. *Cisticola cisticola arquata* (Müll.). Fantail Warbler.

Breeds in the cornfields in the plain of El Outaia: nest with young on April 16. Also common in corn near Bordj Saada (J). Unfinished nest at Biskra in reeds on April 12, 1912; nest and young near Bône, April 12, 1910 (W). Very common near Ain Mokra: about a dozen nests between May 7 and 14, with clutches varying from three to seven in number (R).

69. *Crateropus fulvus fulvus* (Desf.). Algerian Bush-Babbler.

Met with in small numbers near Fontaine de Gazelles. More common near Bordj Saada: a nest with five fresh eggs on April 27 in zizyphus bush (J).

70. *Turdus viscivorus deichleri* Erl. North African Mistle-Thrush.

A few breed on the wooded hillsides from Batna to Lambèse. On April 28, 1913, a nest with three fresh eggs was found in a small ilex, only five feet from the ground, and on May 2, 1914, another nest, with three well-grown young, about 15 feet high in a similar tree (J). Met with on southern side of the Aurès range in February, but not common (W).

71. *Turdus philomelus philomelus* Brehm. (*T. musicus* auct.) Song-Thrush.

Extremely abundant at H. Meskoutine, February 25, 1906, feeding on the fruit of the wild olive (W).

72. *Turdus musicus* L. Redwing.

Together with preceding species, but less abundant. Also seen in the market at Algiers early in February (W).

73. *Turdus pilaris* L. Fieldfare.

A few at H. Meskoutine, end of February 1906 (W).

74. *Turdus torquatus* L. (subsp.?). Ring-Ouzel.

One seen on Djebel Azrak, in the Aurès range, February 15, 1906, and three more on the following day near Chir (W).

75. *Turdus merula mauritanicus* Hart. Moorish Blackbird.

Common in the oases of El Kantara, Biskra, and Sidi Okba, breeding among the palms and bushes. Fresh eggs and also young found on April 23. Blackbirds are also fairly common in the ilex scrub near Lambèse, and many nests with fresh eggs were found there about May 1, but whether they belong to this race or *T. m. algirus* is not certain (J). Breeding at El Kantara (W).

76. *Turdus merula algirus* (Mad.). Algerian Blackbird.

Breeding at H. Meskoutine (W). Common near Ain Mokra: several clutches of three or four eggs about May 7 (R).

77. *Monticola solitarius solitarius* (L.). Blue Rock-Thrush.

Scattered pairs in suitable localities. Noted at Bizot, also in the Taya gorge and on Djebel Mellah near El Outaia (J). Not uncommon: seen on an Arab mosque at El Kantara and at other villages: also at Constantine and on cliffs near Hamman Meskoutine (W).

78. *Monticola saxatilis* (L.). Rock-Thrush.

A male seen near Taya, April 8, 1911: also another in the theatre at Timgad, probably breeding (W).

79. *Ænanthe ænanthe* (L.). Wheatear.

A male at Biskra on March 27, 1910: also seen at H. Meskoutine, April 5, 1911, and at Bône, April 25, 1912 (W).

80. *Ænanthe deserti homochroa* Tristr. Saharan Desert Wheatear.

Met with between Biskra and Bordj Saada, but not north of the Col de Sfa (J). A pair west of Biskra, April 1910 (W).

81. *Ænanthe hispanica hispanica* (L.). Western Russet Wheatear.

Not common, but widely distributed: noted near Ain Djendeli, Lambèse, El Kantara and El Outaia. A nest with newly-hatched young at El Outaia on April 19: another with four fresh eggs in a hole in the side of a gully near Lambèse on April 28. The male at this nest had a white throat (J). A male at Fontaines chaudes on March 28, 1910, and a pair at Taya in April 1911: in both cases black-eared (W). Both forms noted at Tebessa (R).

82. *Ænanthe lugens halophila* (Tristr.). Tristram's Warbler.

A good many pairs breed in the steep mud-banks of the dry water-courses at the foot of the hills south of El Kantara. As a rule the nests are placed in holes or

crevices a few feet from the ground, but I have seen nests almost on the ground under boulders on a rock-strewn hillside, and in one case in a cleft between two big rocks. A wall of loose stones is built up in front of the nest, but the amount of material used is much less than in the case of *Æ. l. syenitica*. We were especially anxious to obtain well authenticated eggs of this species, as most of those in collections are quite unreliable. Fortunately the parent birds proved to be extraordinarily bold after the nest had been discovered, perching within a yard or two and even entering the nest-hole while we were still close at hand. The clutch varies from three to five in number, often only three, and it is not uncommon to find one infertile egg in the nest. The eggs are very pale bluish, not unlike those of *Æ. leucura*, but are frequently devoid of markings, or else they appear only on one or two eggs in the clutch. They are also decidedly smaller on the average, but large eggs of *Æ. lugens* approach closely to small eggs of *Æ. leucura*. The breeding season is variable: some birds have eggs by the end of March, and I have seen fledged young on April 21, but fresh or slightly incubated eggs, as well as young, were found between April 20 and 29 (J).

83. *Enanthe leucura syenitica* (Hengl.). African Black Chat.

First met with on the hillsides between Batna and El Kantara: very common at the latter place and round the plain of El Outaia. This species constructs a regular breast-wall and sloping approach of loose flat stones, about two inches across, up to the nest, which is generally in some hole or crevice of a rock, but occasionally also in the steep mud-bank of a wady. Clutch usually four, sometimes five. Fledged young in the remarkable black and white juvenile plumage were met with at El Kantara on April 16, and fresh eggs from April 18 to 30 (J). Nest with young at Tingad on April 9, 1906, and fledged young at Fontaines Chaudes on April 11, 1912 (W).

84. *Saxicola torquata rubicola* (L.). Stonechat.

Not uncommon in the north, but not noted south of Constantine (J). Common in February at Biskra, El Kantara, H. Meskoutine and Kroubs (W). Common on hillsides near Ain Mokra: nest with five incubated eggs on May 7 (R).

85. *Saxicola rubetra* (L.). Whinchat.

Whinchats (subsp.?) were met with near Bordj Saada from April 26 to 28, and were also noted near El Outaia on April 17. They looked dark in colour and may have been migrants (J). A pair at Batna, April 8, 1910: also one at H. Meskoutine on April 19, 1911 (W).

86. *Phœnicurus ochrurus gibraltariensis* (Gm.). Black Redstart.

Common at El Kantara in February. Also noted at H. Meskoutine (W).

87. *Phœnicurus phœnicurus* (L.). Redstart.

Noted at Chetnah, near Biskra, March 30, 1910, and at El Kantara on March 31. Also many at Kroubs on April 17, 1910 (W). These probably were *P. p. phœnicurus* on migration, but a few seen among the ilex trees above Lambèse on May 2, 1914, were almost certainly *P. p. algeriensis* (J).

88. *Diplootocus moussieri* (Olphe - Gall.). Moussier's Redstart.

Common on the hills between Batna and Lambèse, and in small numbers north to Ain Djendeli and south to Biskra. The breeding habits of this bird are especially interesting on account of its two very dissimilar types of eggs. The blue eggs hardly vary at all, but some clutches of white eggs show a faint bluish tinge, while others are pure white. We devoted a good deal of time to this species, and were successful in finding some twenty-five nests, containing ninety eggs. Of these thirty-eight were white and

the remaining fifty-two blue, so that the proportion of white eggs is higher than is generally supposed to be the case. The nesting sites varied considerably: many nests were found in juniper bushes at varying heights, from a few inches to three feet six inches; others were placed close to or actually on the ground, but generally sheltered by bushes. Among the more exceptional sites may be mentioned a hole in the side of a large block of stone, while one nest was actually placed in a hollow among the old matting which sheltered a row of beehives close to an Arab house! This nest was also noticeable in another way, for it contained five white eggs, the only clutch of five met with. The construction of all the nests was very similar, although some were more bulky than others. The foundation consists of large, coarse strips of juniper bark, or dead fibre, with some moss, bits of wool and feathers, lined thickly with thistledown, wool, bents, hares' fur, and feathers of various birds. When flushed from the nest the sitting-bird always proved to be the hen. The first clutch was taken on April 19 and the last by May 2, by which date several nests contained young (J). Noted at Biskra and El Kantara in February 1906: found nesting at Tingad in April, and a pair at Rouknia, near H. Meskoutine, on April 18 (W).

89. *Luscinia megarhyncha* Brehm. Nightingale.

Common at Philippeville, Hammam Meskoutine, and Lambèse (J). At H. Meskoutine on April 6 and at Lac Fetzara on April 12 (W). Common at Ain Mokra: eggs on May 7 (R).

90. *Dandalus rubecula* (L.). Robin.

Robins (subsp.?) were seen at Algiers, generally throughout the Aurès range, at El Kantara and Biskra in February 1906: also at H. Meskoutine in 1910 (W). Probably these were chiefly migrants from Europe.

91. *Prunella modularis* (L.). Hedge-Sparrow.

Noted in gardens near Algiers at the beginning of February 1906 (W).

92. *Troglodytes troglodytes kabyloorum* Hart. Algerian Wren.

Noted at Ain Mokra, the gorge of the Rummel, and in the hills above Batna (J). In February at El Kantara: nests found at H. Meskoutine, where it is abundant (W). Common at Ain Mokra, nesting behind the loose strips of bark on the eucalyptus-trees. Clutches of four or five eggs, from May 7 to 13 (R).

93. *Chelidon rustica rustica* (L.). Swallow.

Generally distributed and common, breeding all over the country south to El Outaia and Biskra (J). Building at El Kantara on April 14 (W).

94. *Hirundo urbica meridionalis* Hart. Algerian House-Martin.

Also breeds in great numbers in some localities, such as Batna and Lambèse. At Ain Dahlia the nests were ready for eggs on May 1 (J). Clutches of fresh and incubated eggs at Ain Mokra on May 12 (R).

95. *Riparia riparia riparia* (L.). Sand-Martin.

Many at Chetmah, near Biskra, on April 10: also noted at Lac Fetzara on April 4 (W).

96. *Riparia rupestris* (Scop.). Crag-Martin.

Flocks of what appeared to be this species were noticed hawking about the high cliffs of the Oued El Kantara, April 20 (J): a flock of fourteen seen flying over a pool at Biskra, February 6, 1906: also noted at cliffs near Hammam Meskoutine in April (W).

97. *Apus melba melba* (L.). Alpine Swift.

Colonies breeding under the tiles of houses at Philippeville and also at Constantine (J). Noted at Bône, Philippeville, and Constantine, where it was nesting under the eaves of a shed (W).

98. *Apus apus* (L.).

Extremely common at Bône, and nesting in the weep-holes of the masonry (J). A flock of twelve passing over Timgad on April 8, 1910 (W).

[*Apus murinus* was not identified with certainty.]

99. *Caprimulgus ruficollis desertorum* Erl. Erlanger's Red-necked Nightjar.

A pair met with east of Khenchela on May 24. The testes of the male were the size of peas (R).

100. *Merops apiaster* L. Bee-cater.

Common: flocks had already arrived at El Guerrah on April 14. Breeds in the river-banks near St. Charles (J). Flocks passing north at Chetmah, near Biskra, on April 10; also at H. Meskoutine on April 19 (W).

101. *Merops persicus chrysocercus* Cab. & Hein. Saharan Bee-cater.

Seen in small flocks near Bordj Saada, April 27, 1914 (J).

102. *Upupa epops epops* L. Hoopoe.

Generally distributed but not numerous anywhere (J). Many at Biskra, frequenting the drains on March 27; also many at H. Meskoutine in April (W). Feeding young at Ain Mokra on May 8 (R).

103. *Coracias garrulus garrulus* L. Roller.

A few on the hillsides near Batna and Lambèse, April 28 (J).

104. *Picus vaillantii* (Malh.). Algerian Green Woodpecker.

Only met with among the big ilex-trees above Lambèse: nest-hole not quite finished on May 2 (J). Heard in Taya cork-oak woods, April 8, 1911 (W). Heard in wooded hillsides west of Tebessa (R.).

105. *Dryobates major numidus* (Malh.). Algerian Great Spotted Woodpecker.

Also noted in the Taya cork-oak woods on the same

date (W). A Spotted Woodpecker (sp.?) seen at Ain Mokra, May 2, 1913 (R).

106. *Jynx torquilla mauritanica* Rothsch. Algerian Wryneck.

A richly coloured bird, undoubtedly of this race, seen and heard at H. Meskoutine on February 26, 1906. Also noted on April 6 (W).

107. *Cuculus canorus* L. Cuckoo.

Many calling on the hills near Lambèse, April 19 (J). Only noted at Bône (W). Seen several times at Ain Mokra (R).

[As the Ain Mokra birds were met with in May, they must have belonged to the small Mediterranean form, *C. c. minor* A. E. Brehm.]

108. *Strix aluco mauritanica* (With.). Moorish Brown Owl.

A young bird, still in down, but with the primaries in quill, which had fallen from the nest in a eucalyptus wood at Ain Mokra, was found on May 8 in the possession of an Arab boy. Iris blue (R).

109. *Bubo bubo ascalaphus* Sav. North African Eagle-Owl.

My first acquaintance with this fine species was on April 18, 1913, when we came across a single bird perched on the edge of a recess about 20 feet high in the steep rock-wall of a gully in one of the ranges bordering the El Outaia plain. His big yellow eyes were wide open, but he remained still for some minutes before taking wing and flying overhead down the wady. The ledge had evidently been in use for some time, as the ground below was strewn with bones and fragments of pellets. In the following year another bird was flushed from a hole under a big boulder on a steep mountain-side on April 30, but this proved to be only a roosting place and showed no traces of breeding (J).

110. *Tyto alba alba* (Scop.). Barn-Owl.

The characteristic scream was heard in the dusk near Batna, April 18 and 19, 1914 (J). Also heard nightly at H. Meskoutine in February (W).

111. *Athene noctua glaux* (Sav.). Southern Little Owl.

Resident among the Roman remains at Lambèse (J). At Lambèse: one sitting on telegraph-post near Bône on April 23 (W).

112. *Otus scops scops* (L.). Scops Owl.

Generally distributed: heard at Lambèse, Ferme Dufourg and Biskra (J).

113. *Gyps fulvus fulvus* (Habl.). Griffon Vulture.

Not uncommonly seen on the wing in north-eastern Algeria, but less commonly in the south-east (J). A party of about twelve seen together on the ground near El Guerrah, February 5, 1906. At a cliff, near H. Meskoutine, a small colony was found breeding. In 1911 half-grown young were moving about on the nesting ledges in April, but in 1912, on April 6, one nest contained a fresh egg, another an incubated egg, and a third a chick in down (W).

114. *Neophron percnopterus percnopterus* (L.). Egyptian Vulture.

Several pairs breed in the gorge of the Rummel at Constantine, and, not being disturbed, are very tame. Scattered pairs also nest on the hills near Ain Djendeli, near El Kantara and the ranges to the south (J). Breeding at El Kantara and in cliffs near H. Meskoutine (W). Common near Tebessa: also occasionally seen at Ain Mokra (R).

115. *Gypaëtus barbatus atlantis* Erl. North African Bearded Vulture.

I visited the eyrie on Djebel Metlili, from which a young bird and an addled egg were taken in 1911 (see Nov. Zool. xviii. p. 532), and also met with another south of El Kantara, which was occupied in 1913 (J). Immature and adult birds,

the latter dropping bones, seen at El Kantara in February 1906, and again in April 1912 (adult only). Also noted at Tilatou and in the Taya gorge, April 1911 (W).

116. *Aquila chrysaëtus* (L.). Golden Eagle.

One seen near Djebel Taya, April 30 (J). Seen at cliffs near H. Meskoutine: nest empty, but lined with fresh sprigs of ash and terebinth, on April 18 (W).*

117. *Eutolmaëtus fasciatus fasciatus* (Vieill.). Bonelli's Eagle.

We had already seen individuals of this species patrolling the plain of El Outaia, and on April 20 found an eyrie in a small isolated cliff, which contained no fewer than three well-grown young, still in down. The clutch of this species generally consists of two eggs, occasionally one only. When first seen, one of the parents was standing on the nest and feeding the young in turn from the carcass of a Gundi (*Ctenodactylus gundi*) (J). A pair bred on a ledge of a low cliff near H. Meskoutine, and the nest contained two fresh eggs on February 26, 1906. Also noted at this locality in April 1910 and 1912: and at Lac Fetzara in April 1910 and March 1911 (W).

118. *Eutolmaëtus pennatus* (Gm.). Booted Eagle.

Seen at Ain Mokra several times in May (R).

119. *Buteo ferox cirtensis* (Lev.). African Buzzard.

A nest in a cleft of the precipitous side of a narrow gorge contained three fresh eggs on April 19, 1913, and three days later we found a second, accessible without the help of a rope, which contained the unusual number of four large young, still in down. Both these nests were in the ranges south of El Kantara. In 1914 the nesting site which contained four young in 1913, was again in use, but this time held only three young birds on April 30, still in white down (J). Either this or the preceding species seen at the Taya gorge and Constantine (W).

* A large light-coloured Eagle flushed on May 6 at Ain Dahlia (R) was probably *Aquila rapax belisarius* Lev.

120. *Haliaëtus albicilla* (L.). Sea-Eagle.

A fine adult bird, with light head and white tail, seen at close quarters flying near the shore of Lac Fetzara at Ain Mokra on May 11, 1913, subsequently settling in the rushes (R).

121. *Circus æruginosus harterti* Zedl. North African Marsh-Harrier.

Several pairs breed in the reed-beds along the north shore of Lac Fetzara: a nest with three eggs found at Ain Dahlia on May 1, 1913. Also a pair evidently attempting to breed in a small marsh south of Ouled Rahmoun. Harriers (sp. ?) were seen near Bordj Saada, April 26 to 28 (J). About three pairs near Ain Dahlia in 1911: also seen in 1910 and 1912 (W). A single incubated egg brought in by Arabs on May 15 from the west side of Lac Fetzara (R).

122. *Circus pygargus* (L.). Montagu's Harrier.

An adult male hung up on a tree near Algiers, February 1906 (W).

123. *Circus macrourus* (Gm.). Pallid Harrier.

One seen on the wing near Biskra on February 6, 1906 (W).

124. *Accipiter nisus punicus* Erl. North African Sparrow-Hawk.

Seen in the pine forest, Djebel Azrak, Aurès Mts., February 17, 1906: also in the Taya cork-oak forest in April 1911 (W).

125. *Milvus milvus* (L.). Red Kite.

Apparently two pairs breeding in range of cliffs near H. Meskoutine, April 6 and 18, 1912. Single birds also seen near Constantine, February 24, 1906, and near Les Lacs in April 1910 (W).

126. *Milvus migrans migrans* (Bodd.). Black Kite.

Common and widely distributed north of the plain of El Outaia, but less numerous to the south. Many pairs

breed on Djebel Metlili (J). Migratory : not noted up to March 4, 1906, but several seen at El Kantara on March 31, 1910. As many as seventeen seen together on the wing at El Kantara : also in numbers at Constantine (W).

127. *Elanus cæruleus* (Desf.). Black-shouldered Kite.

One seen sitting on telegraph-wires and on the wing at Hammam Meskoutine, April 1911. The plumage is unmistakable : mantle and wings grey with black triangular patch on shoulders (W).

128. *Circaëtus gallicus* (Gm.). Short-toed or Snake Eagle.

Seen once or twice between El Kantara and El Outaia (J). A nest in an olive-tree, only seven feet from the ground, at H. Meskoutine in April 1911 : also seen there in April 1912, and near Lac Fetzara (W).

129. *Falco columbarius regulus* Pall. Merlin.

One seen chasing House-Bunting at Biskra, February 7, 1906 (W).

130. *Falco naumanni naumanni* Fleisch. Lesser Kestrel.

Only identified with certainty at the gorge of the Rummel, Constantine, in April (J). Common at Constantine on April 9, 1910 (twenty-two sitting on one length of telegraph-wire), but not observed there on February 23.

131. *Falco tinnunculus* L. Kestrel.

Generally distributed and common. A nest in a hole of a high mud-cliff, contained four eggs on April 30, 1914 (J).

132. *Falco peregrinus pelegrinoides* Temm. Algerian Peregrine.

A nest with three half-incubated eggs taken at El Kantara, on April 3, 1910. From the slaty head and mantle, and lightly ticked fulvous breast of the Falcon, it must have been this species, although Lanners usually nest here. Also apparently breeds in the Taya gorge and on cliffs near H. Meskoutine (W).

133. *Falco biarmicus erlangeri* Kleinschm. Algerian Lanner.

Breeds in fair numbers in the rocks at El Kantara and in the mountain ranges which border the El Outaia plain. Remains of eggshells were lying beneath one eyrie which we found in a steep cliff on the evening of April 18, 1913, but as I could reach it with a nesting-stick, it seemed worth while to try for a possible addled egg. As luck would have it, this was obtained after a few minutes' "fishing," and then, to my astonishment, the Falcon slipped off the nest where she had been all the time, almost invisible in the dusk. There were also two recently hatched young in this eyrie. In 1914 the site was again occupied and young could be seen there on April 30. Another eyrie visited on April 25 contained four young in down, and the wings and breast-bone of a recently killed Kestrel showed that Hawks do sometimes "pick out Hawks' eyne" (J). Identified at El Kantara (W).

134. *Pandion haliaëtus haliaëtus* (L.). Osprey.

One seen in March 1911 by the shore at Bône, and a pair fishing close to the town on April 5, 1912 (W). One seen at the mouth of the river at Bône on May 13, 1913 (R).

135. *Phalacrocorax* sp.?

A flock of about twenty Cormorants or Shags seen flying over Lac Fetzara on May 1, 1913 (J). A flock seen on May 4, 1913, at Aïn Mokra (R).

136. *Sula bassana* (L.). Gannet.

Fishing along shore west of Algiers in some numbers, end of January 1906: also noted at Bône in March 1911 (W).

137. *Ardea cinerea cinerea* L. Common Heron.

Met with occasionally in April even in the south: one on the Oued El Kantara, April 20, 1914; seven or eight on Lac Fetzara, May 1, 1913 (J). Seen at Biskra, April 12, 1912, II. Meskontine, April 1911, and on Lac Fetzara,

April 4, 1912 (W). Several on Lac Fetzara, May 4, 1913 (R).

138. *Ardea purpurea purpurea* L. Purple Heron.

One on Lac Fetzara, April 1910: also at Bône (W).

139. *Ardeola ibis ibis* (L.). Buff-backed Heron.

A flock of about forty seen on Lac Fetzara on May 2, and a breeding colony reported as still existing on the south side of the Lake (J). One shot in Oued Biskra, April 12, 1912: others seen on Lac Fetzara (W). Common near Ain Mokra (R).

140. *Egretta garzetta garzetta* (L.). Lesser Egret.

At Lac Fetzara, but less numerous than the preceding species, April 1912 (W). Ain Mokra (R).

141. *Nycticorax nycticorax nycticorax* (L.). Night Heron.

One seen on Lac Fetzara, April 1910 (W). Flock of six near Ain Mokra on May 4, 1913 (R).

142. *Ciconia ciconia ciconia* (L.). White Stork.

Locally very common where not persecuted. At Constantine at least a dozen nests could be seen from one point on the roofs of the houses in the Arab quarter. Near Ouled Rahmoun and by the line to Batna there are many nests in trees: one tree alone contained four nests, but probably some were unoccupied. Nests may also occasionally be seen on Roman ruins (J). First arrival noted on February 6, 1906, when a flock of eight passed over Biskra. In pairs on the nests at Constantine on February 24. Sometimes breeds on the roofs of French houses: three nests seen on the gables of one house. Rare in the Taya valley, but a small flock seen migrating there on April 19, 1912. Two clutches of four eggs found near Kroubs on April 24, one slightly and one considerably incubated. Abundant at Bône: seventeen nests counted in the town (W).

143. *Platalea leucorodia leucorodia* L. Spoonbill.

Three seen on the wing, and also subsequently feeding, on Lac Fetzara, April 24, 1912 (W).

144. *Botaurus stellaris stellaris* (L.). Bittern.

Heard booming on Lac Fetzara, April 4 and 23, 1912 (W).

145. *Phœnicopterus roseus* Pall. Flamingo.

Large flocks usually to be seen on "Les Lacs" (Chott Tinécilt, and Sebket ez Zmoul) in April (J, W).

146. *Anas platyrhyncha* L. Mallard.

Some species of duck breeds on the Oued Biskra, near Bordj Saada, and the eggs are often taken by the Arabs. On April 27 we flushed half a dozen either of this species or the Gadwall from high reeds, but could not get a clear view. On Lac Fetzara the Mallard is plentiful (J). Common on Lac Fetzara : a couple also seen by the shore near Bône in March (W).

147. *Anas crecca* L. Teal.

At Lac Fetzara in March 1911 (W).

148. *Anas angustirostris* Mén. Marbled Teal.

Clearly identified at close quarters on Lac Fetzara, May 18, 1913 (J).

149. *Anas strepera* L. Gadwall.

Many on Lac Fetzara, April 11, 1911 (W).

150. *Spatula clypeata* (L.). Shoveler.

Very abundant on Lac Fetzara, March 1911 (W).

151. *Nyroca nyroca* (Güld.). White-eyed Duck.

On Lac Fetzara, near Ain Mokra, May (E. M. M.).

152. *Nyroca ferina ferina* (L.). Pochard.

Several drakes in full plumage near Ain Dahlia on May 1, 1913 (J).

153. *Nyroca fuligula fuligula* (L.). Tufted Duck.

On Lac Fetzara, April 11, 1914 and April 4, 1912 (W).

154. *Erismatura leucocephala* (Scop.). White-headed Duck.

One seen on Lac Fetzara, April 4, 1912 (W). Several near Ain Mokra, May 10, 1913 (R).

155. *Columba palumbus excelsa* Bp. Algerian Wood Pigeon.

A few in the woods from Batna to Lambèse (J). Very local : nineteen seen on one dead tree at H. Meskoutine on March 28 (W).

156. *Columba livia livia* L. Rock Dove.

A local resident, very numerous in some places. Great numbers breed in the wonderful labyrinth of cañons between Djebel Mellah and the Oued El Kantara, ranging thence over the plain of El Outaia (J). Common at El Kantara, Tilatou and the Taya Gorge (W).

157. *Streptopelia turtur arenicola* Hart. Desert Turtle Dove.

Plentiful in the Taya valley : also in the oases of Biskra and Sidi Okba (J). A few at Biskra early in February: H. Meskoutine in April (W). Several seen at east of Khenchela, May 24 (R).

158. *Streptopelia senegalensis ægyptiaca* (Lath.). Senegal Turtle Dove.

Breeds among the palms at Biskra. A clutch of two incubated eggs taken April 23 (J).

159. *Pterocles arenarius* Pall. Black-bellied Sand-Grouse.

Each of the Sand-Grouse has a characteristic note constantly uttered in flight, by which it can be easily identified. This species breeds on the rock-strewn slopes and barren levels of the plain of El Outaia in considerable numbers, but the area is so vast that it is difficult to find the nests. First egg picked up on April 20 (J). Seen near Biskra, April 10 (W).

160. *Pterocles alchata alchata* (L.). Pintail Sand-Grouse.
Met with at Bordj Saada (J).

161. *Pterocles senegallus senegallus* (L.). Senegal Sand-Grouse.

Immense small flocks of this species at Bordj Saada on April 27. Although this bird is found in such numbers and has such a wide range, the number of eggs in collections is exceedingly small. Mr. Pearson took some clutches in Sind in 1895 in mid-May: Mr. A. G. Tomlinson obtained a clutch near Bussorah on June 21, 1911, and the Tring Museum contains a single egg from Mesopotamia taken on May 15. Tristram (*Ibis*, 1860, p. 71) states that he obtained "only one nest," and makes some remarks on the eggs, but no specimens appear to have been included in his collection. With this possible exception I am not aware of any eggs having been previously taken in Africa in a natural state, though they have been laid in confinement, and perfect eggs have been taken from the oviduct. We were fortunate in discovering a pair or two breeding in the southern part of the plain of El Outaia, and a nest with two eggs was found on April 15, but unfortunately one was broken by accident. The other is typical and measures 41.8×28.2 mm. (J).

162. *Caccabis petrosa petrosa* (Gm.). Barbary Partridge.

Tolerably common in the scrub on the hills from Batna to Lambèse: an incomplete clutch of five eggs found May 2, 1914 (J). General in the Aurès range in February: also at H. Meskoutine, where a clutch of four eggs was taken April 7, 1911 (W).

163. *Caccabis petrosa spatzi* Reichw. Spatz' Barbary Partridge.

This desert form is met with sparingly from El Kantara to Bordj Saada, and several nests with ten or twelve to fifteen eggs were found among bushes on hillsides and dry watercourses between April 22 and 27 (J).

164. *Coturnix coturnix coturnix* (L.). Quail.

From April 15 to 22, 1913, a strong migration of Quail was in progress at El Kantara, and great numbers were shot while the corn was being cut. Clutches of fresh and incubated eggs were also mown out on April 17, and probably many breeding birds are killed at such times. Among a bunch of some fifty birds which I examined on April 16, were one or two birds of the year. In 1914, migration was practically over by April 20. Messrs. Rothschild and Hartert state that this species breeds at least as far south as Batna and Djebel Mahmel, but it also nests commonly at El Outaia, and I have seen fresh eggs taken at Biskra on April 22 (J).

165. *Rallus aquaticus aquaticus* L. Water-Rail.

At Lac Fetzara, April 11, 1911 (W). [*Porzana porzana* (L.) was also met with in the Tunis market on March 7, 1906 (W).]

166. *Crex crex crex* L. Corncrake.

A few pass through on migration with the Quail. Several were shot at El Outaia on April 16, and one on April 21 (J).

167. *Gallinula chloropus chloropus* (L.). Waterhen.

One seen on a tiny reed-covered pool near the Oued El Kantara on April 29 (J). None seen on Lac Fetzara, but a clutch of seven incubated eggs were brought in by an Arab from the west side of the lake on May 15 (R).

168. *Fulica atra atra* (L.). Coot.

Breeds in enormous numbers at Lac Fetzara, where the Arabs collect thousands of eggs for food. In consequence, most of the nests seen on May 1, and even later, contained from one to three eggs, and only a few had full clutches. Although some clutches have dark red-brown spots, instead of the usual blackish markings, there seems to be no evidence that *F. cristata* breeds on the Lake (J, W, R).

169. *Porphyrio cærulea* (Vandelli). Purple Gallinule.

Although not nearly so common as the Coots, Purple Gallinules are nevertheless found in fair numbers on Lac Fetzara, and are not at all shy. In a day's work some fifteen or twenty birds may be flushed from the rushes and reed-beds. Occasionally one may be seen perched on the top of lofty reeds, looking very much out of place as it grasps them with its enormous pink feet. Messrs. Wallis and Pearson took clutches on April 23 and 24, and newly hatched young were found by Jourdain on May 1; while eggs were also found on May 4, and young and eggs from the 10th to the 14th by Messrs. Rateliff and Murray. The nests seem to be more built up above the water than those of the Coot and often have reeds lying across them (J, W, R). Young about two days old have a strong curved bill, reddish flesh at the base, a black spot at the beginning of the feathers on the upper mandible, rest of bill white, black-tipped, down black all over, top of head nearly bald and soft, showing red flesh. Iris dark brown, feet reddish flesh: small white curved claw $\frac{1}{8}$ in. long on "thumb" where bastard wing is (R).

170. *Megalornis grus grus* (L.)? Craue.

A flock of large slow-flying slaty grey birds, probably this species, seen north of El Guerrah on February 5, 1906 (W).

171. *Houbara undulata undulata* (Jacquin.). Houbara Bustard.

Fresh eggs were shown to me at Biskra, which had been brought in by Arabs some time before April 25 (J). Two were seen to pitch in standing barley at Chetmah, near Biskra, April 10, 1912 (W).

172. *Burhinus œdicnemus saharæ* Reichw. Saharan Stone-Curlew.

Heard in the Bled Salaouine and the plain of El Outaia. An egg was brought in by an Arab at El Outaia on February 3! and a clutch of two much incubated eggs taken on April 24 (J). A pair near Tebessa (R).

173. *Glareola pratincola pratincola* (L.). Pratincole.

Some thirty or forty birds scattered over the baked mud-flats on the west of Lac Fetzara on May 14, but no sign of nesting (R).

174. *Charadrius dubius* Scop. Little Ringed Plover.

Met with in some numbers in the Oued El Kantara, evidently breeding (J). A pair at Fontaines Chaudes, Biskra, on April 11; in pairs, Oued Biskra, April 12; several pairs apparently nesting in the river-bed at H. Meskoutine in April (W).

175. *Charadrius alexandrinus* L. Kentish Plover.

A pair haunted a sandy patch in the desert near Bordj Saada: apparently breeding on April 28 (J). A single bird with a ruddy crown at Biskra, April 11. Also breeds on the sea-shore near Bône: nest scraped out, April 25, 1912 (W). Clutch of three eggs taken on west side of Lac Fetzara, May 15, 1913 (R).

176. *Charadrius apricarius* L. Golden Plover.

Flocks at Chott Tinécilt, February 5, 1906; also in Tunis market (W).

177. *Vanellus vanellus* (L.). Lapwing.

Many on swampy ground north of El Guerrah, near Constantine and Les 'Laes early in February: also in Algiers market (W).

178. *Himantopus himantopus himantopus* L. Black-winged Stilt.

Seen at Ain Dahlia, May 4, 1913 (R).

179. *Gallinago gallinago gallinago* (L.). Common Snipe.

In Algiers market, end of January: also seen near Kroubs, February, and near Bône in April (W). [*Limnocryptes gallinula* also seen in Tunis market in March (W).]

180. *Scolopax rusticola* L. Woodcock.

In Algiers market, end of January 1906 (W).

181. *Erolia alpina* (L.). Dunlin.

Flocks at Chott Tinécilt, February 1906 (W).

182. *Tringa hypoleuca* L. Common Sandpiper.

Two seen in the Oued El Kantara, April 29 (J). Two or three pairs at Bône, April 6 : also seen at H. Meskoutine on April 19 (W).

183. *Tringa ochropus* L. Green Sandpiper.

One frequented a drain at Biskra, February 1906 (W).

184. *Tringa totanus* (L.). Redshank.

Two seen by the Oued Biskra, near Bordj Saada, April 27 (J). Apparently this species, in numbers at Lac Fetzara, April 4, 1912 (W).

185. *Numenius arquata* (L.). Curlew.

Common near Lac Fetzara, April 4, 1912 (W).

186. *Hydrochelidon nigra nigra* (L.). Black Tern.

Several seen on Lac Fetzara, May 4, 1913. A white-rumped black Tern seen on May 10 was probably *H. leucoptera* (R).

187. *Hydrochelidon leucopareia leucopareia* (Temm.).

Whiskered Tern.

Early in the morning of May 1, 1913, a large flock of these Terns was seen resting on the tops of a patch of high reeds near Ain Dahlia, where they had probably spent the night. Later in the day I saw many hawking over the lake (J). None on April 4, but many on April 24 (W). Very common near Ain Mokra (R).

188. *Sterna hirundo* L. Common Tern.

A single bird with an injured foot, seen several times between April 27 and 28 at Bordj Saada (J).

189. *Larus melanocephalus* Temm. Adriatic Gull.

Seen off Bône, March 1911 : also at the marsh near Lac Fetzara, April 4 (W).

190. *Larus argentatus cachinnans* Pall. Mediterranean Herring Gull.

A few pairs about the harbours at Philippeville and Bône in April and early May (J). Noted at Bône, April 3, and Philippeville, April 26 (W).

191. *Larus fuscus* L. Lesser Black-backed Gull.

Seen off Algiers, January 30, 1906: also near Bône, April 5, 1912 (W).

192. *Hydrobates pelagicus* (L.). Storm-Petrel.

Three or four seen near the boat, off Philippeville, April 26, 1912 (W).

193. *Puffinus kuhlii kuhlii* (Boie). Mediterranean Shearwater.

Both large and small species of Shearwater were seen at sea off the Algerian coast, but the former only in small numbers, on April 13 (J).

194. *Puffinus puffinus yelkouan*. Levantine Shearwater.

Much commoner than the preceding (J). Shearwaters (sp. ?) noted April 3 (off Bône), April 26 (Philippeville) (W).

195. *Colymbus cristatus cristatus* L. Great Crested Grebe.

Common on Lac Fetzara in March 1911: also noted April 4, 1912 (W).

196. *Colymbus nigricollis nigricollis* (Brehm). Black-necked Grebe.

In full breeding plumage and probably nesting on Lac Fetzara, April 14, 1911 (W). Three watched and identified with certainty on May 10, 1913. No nests found (R).

197. *Colymbus ruficollis* Pall. Dabchick.

Very plentiful near Ain Dahlia at the beginning of May, when its bubbling notes were constantly heard, and clutches of fresh eggs, from five to seven in number, taken (J). Beginning to lay on April 23, nests with one and two eggs (W). Breeds near Ain Mokra: eggs from May 10 (R).